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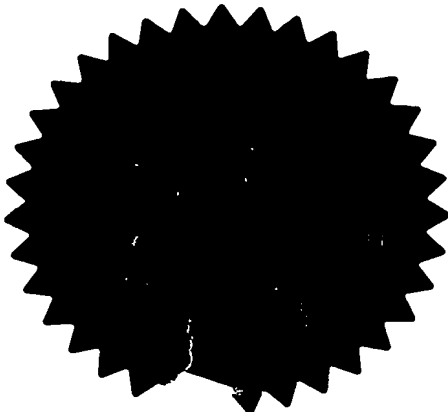
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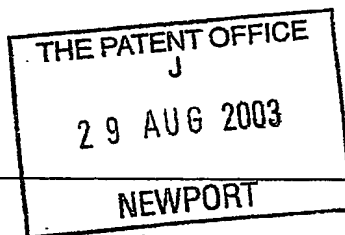


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# Request for grant of a patent

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29 AUG 2003



The Patent Office

Cardiff Road  
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1. Your reference

CASE 1

2. Patent application number

(The Patent Office will fill in this part)

0320215.7

29AUG03 E833514-2 C03015  
P01/7700 0.00-0320215.7

3. Full name, address and postcode of the or of each applicant (underline all surnames)

A HARRISON (BEDDING) LIMITED  
WESTLAND ROAD,  
LEEDS LS11 5SN.

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

ENGLAND

6458426001

4. Title of the invention

~~Bedding units~~  
SPRING UNITS

5. Name of your agent (if you have one)

ANTHONY WATSON & CO.

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

9 HAWTHORN CROFT,  
TADCASTER,  
NORTH YORKSHIRE LS24 9UB.

Patents ADP number (if you know it)

0592032001

8454704001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

YES

a) any applicant named in part 3 is not an inventor, or

b) there is an inventor who is not named as an applicant, or

c) any named applicant is a corporate body.

See note (d))

## Patents Form 1/77

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Continuation sheets of this form

Description

~~10~~ (IN SUP) 12

Claim(s)

Abstract

Drawing(s)

3 SHEETS (INFORMAL)

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Anthony Watson 26 Date 28th Aug 2003

12. Name and daytime telephone number of person to contact in the United Kingdom

MR A J WATSON  
01937 830140

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## SPRING UNITS

This invention relates to spring units for use in beds and mattresses.

05 According to the present invention, there is provided a method of forming a spring unit for use in a bed or mattress comprising the steps of arranging a plurality of rows of springs in adjacent relationship, arranging one or more shrouds to pass around said rows of springs or groups of rows of springs such that the shroud(s) may move relative to  
10 the rows or groups of rows of springs when pressure is applied to said rows or groups of rows of springs.

Preferably, said shroud(s) will be anchored to a part of the spring unit and the shroud(s) will be engaged by a plurality of rigid or semi-rigid  
15 members running parallel to the rows of springs. Said members may be secured to a part of the spring unit or said members may form part of a framework which is itself secured to said spring unit. The members may be located at any position along the length of the springs.

20 The members will preferably be constituted by rollers or other low

low friction means.

- 05 In an embodiment of the invention, the rows of springs will be secured indirectly to a base through the intermediary of a single shroud which passes around all of the rows of springs such that there are two lengths of the shroud between adjacent rows of springs, and located between adjacent rows and engageable by said two lengths is a roller or other
- 10 low friction means so as to enable the two lengths of shroud to move relative to one another, and hence allow the springs in adjacent rows to move relative to one another.

- In an alternative embodiment of the invention, the shroud may pass
- 15 around groups of rows of springs, such as two rows, three rows or more, there being two lengths of the shroud between adjacent groups, a roller or other low friction means being located between each of said two lengths so as to enable the said two lengths of shroud to move relative to one another and hence allow adjacent groups of springs to
- 20 move relative to one another.

In a further alternative embodiment, there will be a shroud for each row of springs or each group of rows of springs, the shrouds being  
05      secured indirectly to a base.

In a still further alternative embodiment, there will be upper and lower shrouds - either a single upper shroud and a single lower shroud, or a plurality of upper shrouds and a plurality of lower shrouds - which are  
10      in engagement with the upper ends and the lower ends of the springs respectively.

The springs may be pocketed springs, double pocketed springs, helical springs, or any other type of spring normally associated with  
15      beds and mattresses.

According to another aspect of the present invention there is provided a spring unit for use in a bed or mattress comprising a plurality of rows of springs arranged in adjacent relationship, said rows being arranged  
20      singly or in groups by one or more shrouds which pass around said

rows or groups of rows such that there two layers of the shroud(s)  
between each row of springs or each group of rows of springs, and  
05 means to enable the layers of each of said two layers to move relatively  
to one another and hence allow movement of adjacent rows of springs  
or adjacent groups of rows of springs when pressure is applied to said  
rows of springs or groups of rows of springs.

10 Preferably, said means will be a plurality of rollers or other low friction  
means located between the layers of each of the said two layers, said  
rollers or other means being secured directly or indirectly to the spring  
unit so as to secure said rows of springs indirectly to a part of said  
spring unit.

15

The rollers or other means may form part of a frame secured to the  
spring unit, the rollers being freely rotatable relative to said frame so as  
to allow the layers of the shrouds to move relative to one another.

Alternatively, the rollers or other low friction means may simply be  
20 located between said rows or groups of rows.



Preferably, the springs will be pocketed springs or double pocketed  
springs, i.e. a pocketed spring within a pocketed spring, helical  
05 springs or any other suitable type of spring.

In order that the invention may be more readily understood,  
embodiments thereof will now be described, by way of example only,  
reference being made to the accompanying drawings, wherein:

10 Figure 1 is a schematic view of a plurality of springs for use in a  
spring unit according to the invention;

Figures 2 and 3 show alternative arrangements of said springs;

Figure 4 is a view similar to Figure 1, but showing a variation thereof;

15 Figures 5 to 7 are views similar to Figures 1 to 3, and showing  
additional features of the spring unit;

Figure 8 is a view similar to Figure 1, but showing adjacent rows of  
springs in differing positions during use of the bed or mattress;

Figure 9 shows an alternative arrangement of a spring unit according  
to the invention; and

20 Figure 10 is an enlarged view on part of Figure 9.

Referring to the drawings and firstly to Figure 1, there is shown a plurality of springs 2, 4, 6, and 8, each of said springs being part of  
05 a row of springs, such rows being arranged in adjacent relationship as clearly seen in the drawing. It will be appreciated that the rows of springs illustrated form only a part of a whole spring unit.

Each of the springs 2, 4, 6, and 8 illustrated in Figure 1 are double  
10 pocketed springs, i.e. an inner pocketed spring 2B, 4B, 6B, and 8B within an outer pocketed spring 2A, 4A, 6A, and 8A. It will however be appreciated that said springs may be single pocketed springs, ordinary, unsheathed helical springs or indeed any other suitable type of spring normally associated with beds and mattresses.

15

Around each of the rows of springs 2, 4, 6, and 8 are shrouds 10, 12, 14, and 16, the arrangement being that between each adjacent row of springs there are two layers - as seen in the drawing - 10B, 12A, 12B, 14A, 14B, 16A and so on between adjacent rows of springs, the  
20 purpose of which will be explained hereinafter.

Referring now to Figure 2, it will be seen that the adjacent rows of  
springs 20, 22, 24, 26 are arranged in groups, each group consisting of  
05 two rows of springs 20,22, 24,26 and so on, there being a shroud 28  
and 30 around each of said groups, again two layers of adjacent  
shrouds lying between adjacent groups of rows of springs. Similarly,  
Figure 3 shows the rows of springs 40, 42, 44, 46, 48, and 50 grouped  
in threes, there being shrouds 52 and 54 around these groups of three.  
10 As in the Figure 1 and Figure 2 embodiments, there will be two layers  
of adjacent shrouds between each adjacent group of springs, although  
such layers are not referenced in Figures2 and 3.

Figure 4 shows a view similar to Figure 1, but in Figure 4 it will be  
15 seen that the shrouds 60, 62, 64 and 66 extend only part way down the  
lengths of the springs 68, 70, 72, and 74. In all other respects, the  
arrangement is as in Figure 1.

Referring now to Figure 5, this shows the springs and shrouds  
20 arrangement of Figure 1, and additionally shows rollers or other low-

friction means 80, 82, 84 between the two layers of the shrouds  
lying between adjacent rows of springs 2, 4, 6, and 8. Such rollers or  
05 other means are freely rotatable about their axes and will preferably  
form part of a frame (not shown) secured to a part of the spring unit.  
Similarly, in Figure 6, rollers or other low friction means 86, 88, and  
90 lie between the two layers of the shrouds 28 and 30 between  
adjacent groups of the springs 20, 22, 24, and 26, and in Figure 7  
10 rollers or other low friction means 92, 94, and 96 lie between the two  
layers of the shrouds 52 and 54 between adjacent groups of the springs  
40, 42, 44, 46, 48, and 50.

The provision of the rollers or other low-friction means between the  
15 layers of adjacent shrouds and between adjacent rows of springs or  
groups of rows of springs - as shown in Figures 5 to 7 - means that  
the adjacent layers of adjacent shrouds may move relatively to one  
another and so enable adjacent rows of springs or adjacent groups of  
of rows of springs to move relatively to one another. This is  
20 illustrated in Figure 8 - by way of example - from which it will be

such means to allow the relative movement of these layers and hence relative movement of adjacent rows of springs or adjacent groups of  
05 rows of springs.

Referring now to Figure 9, it will be seen that there are shrouds 100 and 102 positioned respectively above and below rows of springs 104, 106, 108, 110, 112, and 114 - the springs being illustrated as single  
10 pocketed springs, although it will be appreciated that such springs may in fact be double pocketed springs, helical springs or any other type of spring usually associated with beds and mattresses. The shrouds 100 and 102 may each be a single shroud or there may be a plurality of individual shrouds constituting the shrouds 100 and 102.  
15 As in the previously described embodiments, there will be two layers of the shrouds between each row of springs.

Reference to Figure 10 - in which the rows of springs have been omitted - shows a plurality of rollers or other low-friction means 116  
20 arranged between the layers of the shrouds which operate in the same

manner as previously described with reference to the earlier  
embodiments of the invention.

05

The upper and lower rollers or other low friction means 116 between  
each row of springs may be connected together so as to form a  
generally rectangular frame which would then be secured to a part of  
the spring unit, the rollers or other means being freely rotatable relative  
10 to the connecting members.

15

The shrouds referred to with reference to the several embodiments of  
the invention will preferably be formed of fabric or other suitable  
material, as will be the pockets of the outer and inner pocketed  
springs.

20

Thus the invention provides a method of forming a spring unit for use  
in a bed or mattress which enables adjacent rows of springs or adjacent  
groups of rows of springs to move relatively to one another such that  
the bed or mattress -in use - will 'mould' itself to a user of the bed or

mattress and thereby provide improved support and comfort to said user.

05

It will be appreciated that whilst the invention has been related to spring units for use in beds and mattresses, the invention is equally applicable to other upholstered units such as sofas, settees and such like articles of upholstered furniture.

10

Finally, instead of the shrouds being secured to a part of the spring unit, they may be fixed to a suitable base, and the rows of springs themselves may be suitably secured to or relative to said base.

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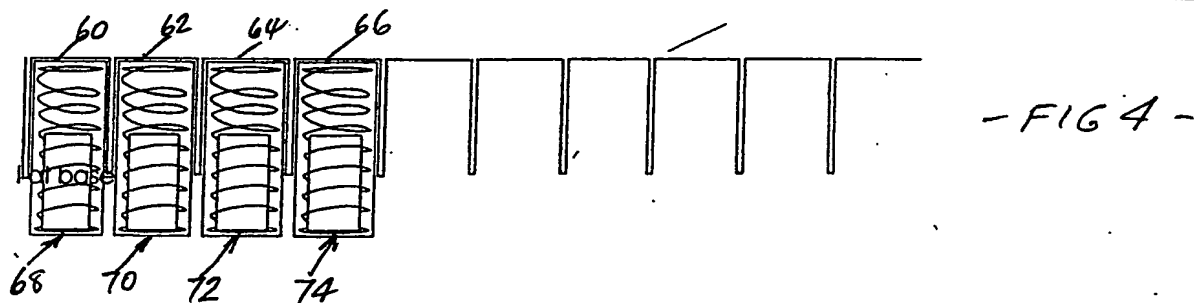
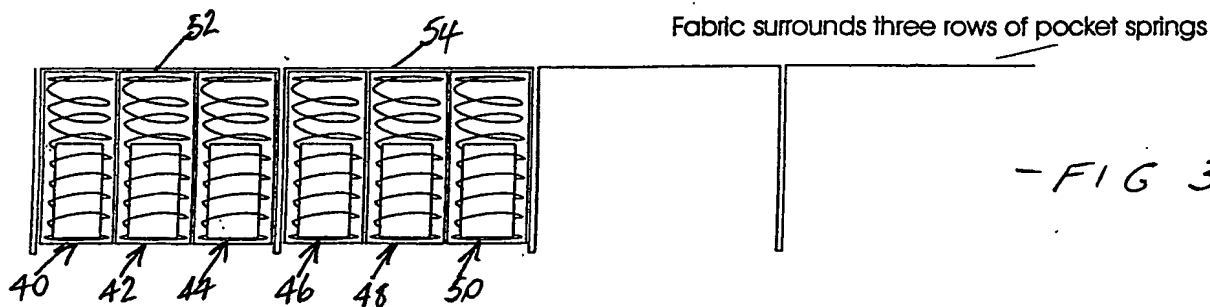
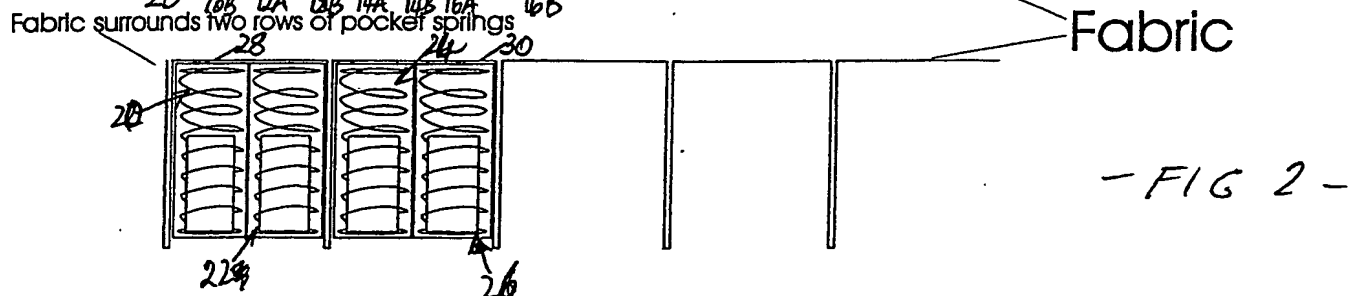
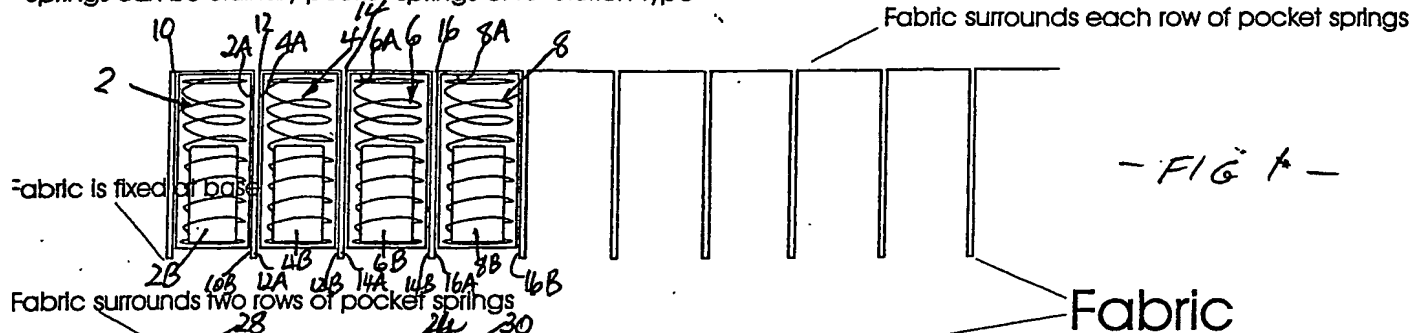
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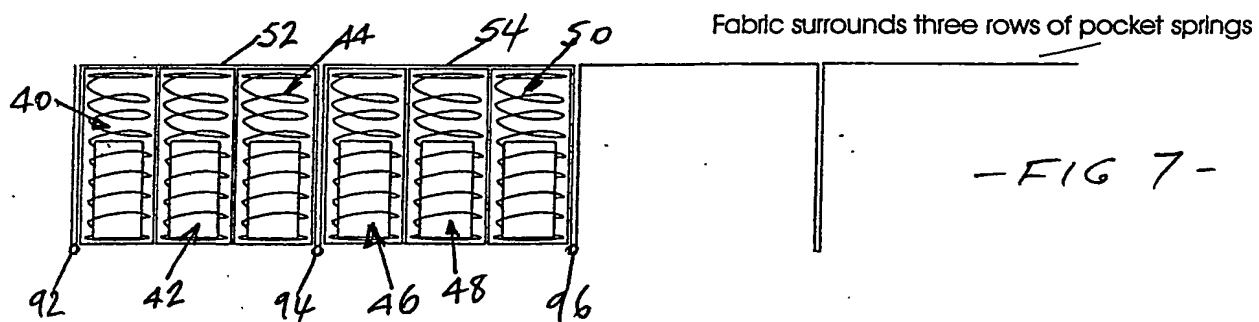
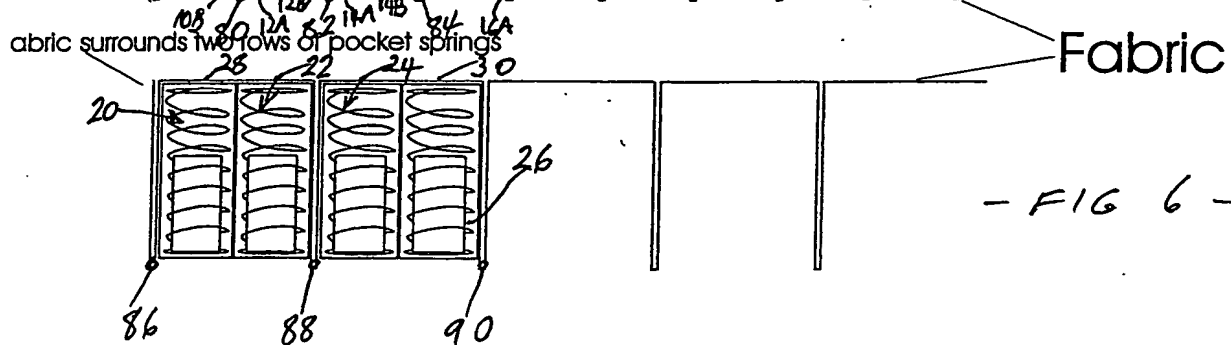
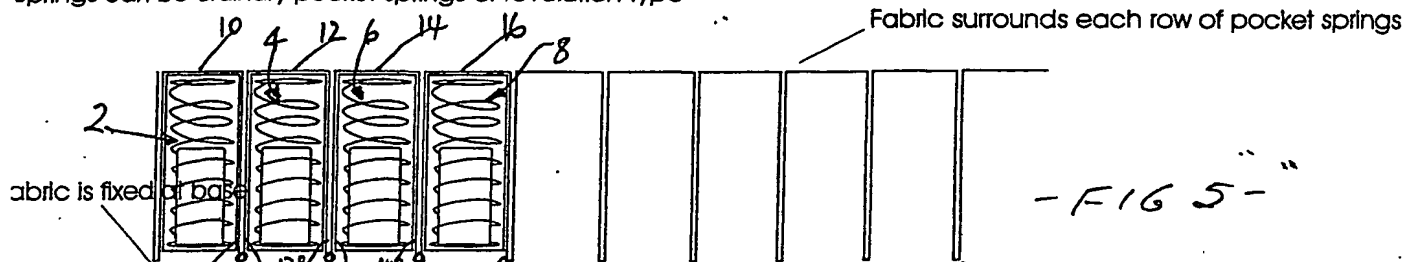


Springs can be ordinary pocket springs or revolution type

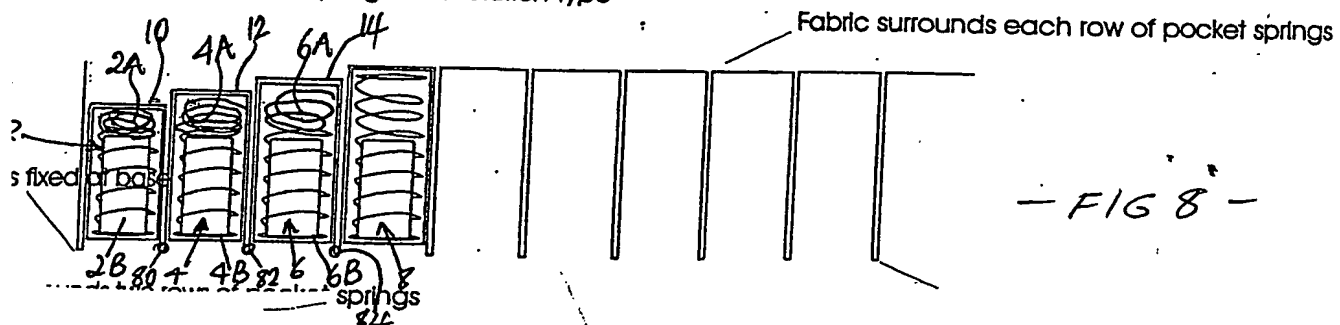


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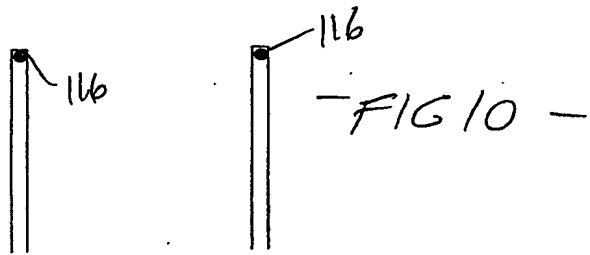
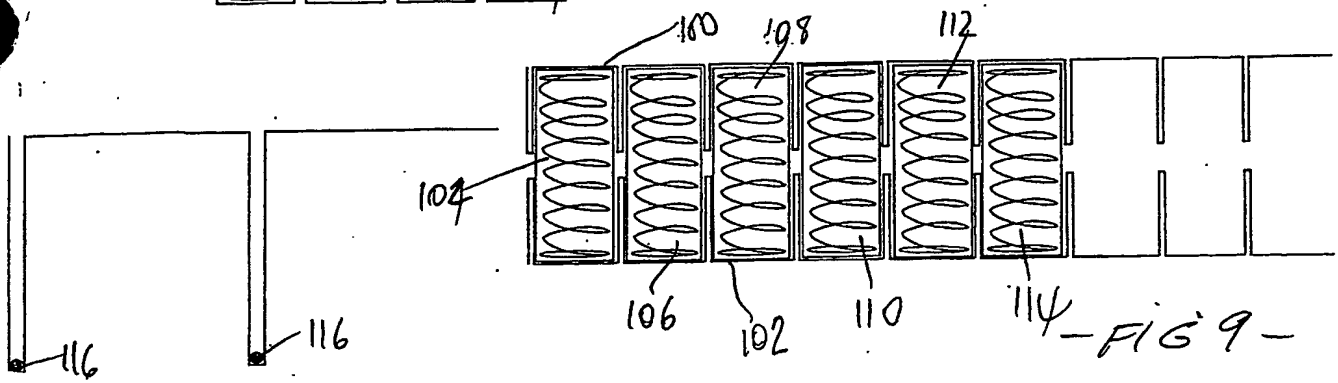
Springs can be ordinary pocket springs or revolution type



Springs can be ordinary pocket springs or revolution type



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